

CONTROL VALVE FOR A SHOWER

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention is related to a shower, and more particularly to a control valve for switching water outlets of a shower.

2. Description of Related Art

With reference to Fig. 10, a first conventional control valve has a body (70). A water inlet (72) is defined at a first end of the body (70) and connected with a water supply pipe (720). A first water outlet (73) and second water outlet (74) are separately defined at a second end of the body (70), wherein a fixed shower (730) is connected to the first water outlet (73), and an adjustable shower (not shown) is connected to the second water outlet (74) by a hose (740). A handle (71) is mounted on a top end of the body (70) for switching between the two water outlets (73, 74), and water can alternatively flow out from the fixed shower (730) or the adjustable shower.

However, the control valve is generally installed at a high position, so most people of short stature cannot reach the handle (71) and need a taller person to operate the handle (71) during bathing, which is very inconvenient for the users.

As an improvement for the conventional control valve, another control valve is illustrated in Fig. 11. The control valve has a body (80) with a water inlet (82) and two water outlets (83, 84). A handling rod (81) is mounted between the two water outlets (83, 84) and extends downwards from a bottom of the body (80). A valve core (810) is mounted at a top end of the handling rod (81). A fixed

1 shower (830) is connected with the first water outlet (83) and a hose (840) is
2 connected between the second water outlet (84) and an adjustable shower (not
3 shown). In the status as shown in Fig. 11, water from the water inlet (82) can
4 flow through the first water outlet (83) and out from the fixed shower (830).
5 Because the handling rod (81) is installed at a low position, the person of short
6 stature can pull or push it to switch water between the fixed shower (830) and the
7 adjustable shower.

8 However, users, especially children, often pull downwards the handling
9 rod (81) with an excessive force, which may cause the handling rod (81) to
10 become disengaged from the body (80).

11 Therefore, the invention provides a control valve to mitigate and/or
12 obviate the aforementioned problems.

13 SUMMARY OF THE INVENTION

14 The main objective of the present invention is to provide a control valve
15 which enables water flow to be switched between two water outlets by the
16 turning of a handle.

17 Other objectives, advantages and novel features of the invention will
18 become more apparent from the following detailed description when taken in
19 conjunction with the accompanying drawings.

20 BRIEF DESCRIPTION OF THE DRAWINGS

21 Fig. 1 is a perspective view of a first embodiment of a control valve for a
22 shower in accordance with the present invention;

23 Fig. 2 is an exploded perspective view of the first embodiment of the
24 control valve in accordance with the invention;

1 Fig. 3 is a cross sectional view of the control valve of Fig. 1 in a status of
2 a water inlet in communication with a first water outlet;

3 Fig. 4 is a cross sectional view of the control valve of Fig. 1 in a status of
4 the water inlet in communication with a second water outlet;

5 Fig. 5 is a perspective view of a second embodiment in accordance with
6 the invention;

7 Fig. 6 is a cross sectional view of the control valve of Fig. 5 in a status of
8 the water inlet in communication with the first water outlet;

9 Fig. 7 is a cross sectional view of the control valve of Fig. 5 in a status of
10 the water inlet in communication with the second water outlet;

11 Fig. 8 is a cross sectional view of a third embodiment of the control
12 valve in a status of the water inlet in communication with the first water outlet;

13 Fig. 9 is a cross sectional view of the third embodiment of the control
14 valve in a status of the water inlet in communication with the second water
15 outlet;

16 Fig. 10 is a cross sectional view of a conventional control valve for a
17 shower; and

18 Fig. 11 is a cross sectional view of another control valve for a shower.

19 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

20 With reference to Fig. 1, according to a first embodiment of the present
21 invention, a control valve for a shower has a body (10). A water inlet (12) is
22 defined at a first end of the body (10). A first water outlet (13) is defined at a
23 second end of the body (10), and a fixed shower (130) is connected with the first
24 water outlet (13). A second water outlet (14) is defined at a middle portion of the

1 body (10) and inclined towards the water inlet (12), and a hose (140) is
2 connected with the second water outlet (14). A handling rod (11) is mounted
3 between the first water outlet (13) and second water outlet (14) and substantially
4 extends downwards from a bottom of the body (10). The handling rod (11) has an
5 outer end (not numbered) extending out from the body (10) and an inner end (not
6 numbered) received in the body (10). A knob (110) is mounted on the outer end
7 of the handling rod (11).

8 With reference to Figs. 2-3, the body (10) has a chamber (100) defined
9 therein and in communication with the water inlet (12), the first water outlet (13)
10 and the second water outlet (14). A valve core (111) is formed at the inner end of
11 the handling rod (11) and movably received in the chamber (100). A plurality of
12 O-rings (112) is provided outside an upper portion of the valve core (111), and an
13 external thread (113) is formed on an outer periphery of a lower portion of the
14 valve core (111). An internal thread (103) is formed at a lower portion of the
15 chamber (100) and engaged with the external thread (113) to threadingly mount
16 the valve core (111) in the chamber (100). A cover (119) is mounted at a bottom
17 of the chamber (100) and the handling rod (11) extends out from the cover (119).

18 When the valve core (111) is in a position as illustrated in Fig. 3, the
19 water inlet (12) is communicated with the first water outlet (13), and the second
20 water outlet (14) is shut off by the valve core (111), so water can flow out from
21 the fixed shower (130). When a user turns the handling rod (11) by the knob (110)
22 to move the valve core (111) to a position as illustrated in Fig. 4, the water inlet
23 (12) is communicated with the second water outlet (14), and the first water outlet
24 (13) is shut off, so water can flow through the hose (140).

1 With reference to Fig. 5, a second embodiment of the present invention
2 has a structure is similar to the first embodiment as described above. Compared
3 with the first embodiment, the water inlet (12) in the first embodiment is used as
4 the first water outlet (13'), and the first water outlet (13) in the first embodiment
5 is used as the water inlet (12'). Therefore, the second water outlet (14') in the
6 second embodiment is defined between the handling rod (11') and the first water
7 outlet (13') and inclined towards the first water outlet (13').

8 When the valve core (111') is in the position as illustrated in Fig. 6, the
9 water inlet (12') is communicated with the first water outlet (13'), and the second
10 water outlet (14') is shut off, so water can flow out from the fixed shower. When
11 the user turns the handling rod (11') to move the valve core (111') to the position
12 as illustrated in Fig. 7, the water inlet (12') is communicated with the second
13 water outlet (14'), and the first water outlet (13') is shut off, so water can flow
14 through the hose (140').

15 With reference to Figs. 8-9, a third embodiment of the present invention
16 has a structure similar to the first embodiment but the handling rod (11'') inclined
17 towards the first water outlet (13'') to facilitate the user to operate the handling
18 rod (11''). The second water outlet (14'') is formed between the water inlet (12'')
19 and the handling rod (11'').

20 When the valve core (111'') is in a position as illustrated in Fig. 8, the
21 water inlet (12'') is communicated with the first water outlet (13''), and the
22 second water outlet (14'') is shut off by the valve core (111''), so water can flow
23 out from the fixed shower (130''). When the user turns the handling rod (11'') to
24 move the valve core (111'') to the position as illustrated in Fig. 9, the water inlet

1 (12") is communicated with the second water outlet (14"), and the first water
2 outlet (13") is shut off, so water can flow through the hose (140").

3 Therefore, according to the invention, the movement of the valve core
4 (111) is controlled by turning the handling rod (11) to prevent the valve core (111)
5 from being pulled out from the body (10) under an excessive force.

6 It is to be understood, however, that even though numerous
7 characteristics and advantages of the present invention have been set forth in the
8 foregoing description, together with details of the structure and function of the
9 invention, the disclosure is illustrative only, and changes may be made in detail,
10 especially in matters of shape, size, and arrangement of parts within the
11 principles of the invention to the full extent indicated by the broad general
12 meaning of the terms in which the appended claims are expressed.